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INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 70-001 PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/IL2005/000249	International filing date (day/month/year) 03.03.2005	Priority date (day/month/year) 04.03.2004
International Patent Classification (IPC) or both national classification and IPC INV. A61K7/48 A61K31/045 A61K31/78 A61K47/32		
Applicant YISSUM, RESEARCH DEVELOPMENT COMPANY ...		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 25.12.2005	Date of completion of this report 01.06.2006
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Loloiu, C Telephone No. +49 89 2399-7245 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IL2005/000249

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-27 as originally filed

Claims, Numbers

1-18 received on 27.12.2005 with letter of 25.12.2005

Drawings, Sheets

1/5-5/5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-18
	No: Claims	-
Inventive step (IS)	Yes: Claims	1-18
	No: Claims	-
Industrial applicability (IA)	Yes: Claims	1-18
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

- 1 Reference is made to the following documents:
D1: US-A-5 447 930 (NAYAK ET AL) 5 September 1995 (1995-09-05)
D4: EP-A-0 320 254 (THAMES PHARMACAL CO.INC) 14 June 1989 (1989-06-14)
D5: US-A-5 122 374 (DUPOY DE GUITAARD ET AL) 16 June 1992 (1992-06-16)
- 2 The present application is directed to the use of ethyl alcohol and a polymeric carrier in the preparation of a composition for the treatment of burns, the weight concentration of ethyl alcohol being from 15 to 50% by weight.
D1 describes a gel composition for the treatment of burns comprising ethanol as carrier in a concentration of up to 10%.
D4 discloses a gel composition comprising ethanol in a concentration of 60 to 90% by weight, the gel being useful, *inter alia*, in the treatment of burns.
D5 relates to gel compositions useful for the treatment of burns and specifically discloses a formulation containing 32% by weight isopropanol.
None of the prior art documents discloses the specific range of concentrations of ethanol in a composition for the treatment of burns, the claimed subject-matter being accordingly novel.
- 3 Document D4, which is considered to represent the most relevant state of the art, discloses (cf. claim 1) a gel composition comprising from 60 to 90% by weight of ethyl alcohol and 0.5 to 5% of a gelling agent.

The subject-matter of claim 1 differs from the above mentioned disclosure in that the ethanol content is in the range of 15 to 50% by weight.

The problem to be solved by the present invention may be regarded as the provision of alternative burns treating composition containing ethanol.

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons.

Starting from D1 as the closest prior art, the presently claimed subject-matter differs in that a specific concentration in ethanol is chosen.

Looking into the technical effect linked to the range specified in claim 1 it is to be noticed that it was shown that when the ethanol content is within the range of 15-50% the beneficial effects on burns are superior in comparison to a gel composition which contains ethanol at a concentration that is either below or above said lower and upper limits.

Especially relevant in light of D4 are the results shown for a gel containing 50% ethanol over one containing 60 ethanol.

The remaining question to be answered is whether the proposed solution, i.e. the choice of a ethanol concentration of 15-50% was obvious for the skilled person in the light of the prior art documents having regard to the effect shown.

None of the cited references describes the therapeutic benefits associated with the use of ethanol in a specific concentration in treating burns.

There is no teaching in D1 that a beneficial therapeutic effects may be achieved upon increasing the ethanol content over the 10% limit mentioned in said document.

On the other hand, D4 discloses gel compositions for the treatment of various dermatological conditions, including burns, in which the concentration of ethanol is not less than 60%.

In view of the foregoing it was considered that the subject-matter of the present application involves an inventive step.

- 4 Upon entering the European phase the applicant's attention is drawn to the fact that an essential feature appears to be missing from the independent claim 1. The present claim 1 requires the presence of a polymeric carrier. In the light of the description (cf. page 6) and also of the examples, including the comparative examples supporting the superiority of a 50% ethanol content over a 60% one, not any polymeric carrier is used but one capable of forming a gel like matrix with the alcohol. It appears to be essential in order to carry out the invention that ethanol is incorporated in a gel matrix.

Claims:

1. Use of ethyl alcohol and a topically acceptable polymeric carrier in the preparation of a composition for the treatment of burns, wherein the weight concentration of said ethyl alcohol is in the range of 15-50% of the total weight of the composition.
2. Use according to claim 1, wherein the concentration of the ethyl alcohol is in the range of 20% to 50%.
3. Use according to claim 1 or 2, wherein the topically acceptable carrier comprises a polymer which forms a gel like matrix with the alcohol.
4. Use according to claim 3, wherein the polymer forming gel like matrix is an acidic polymer or a salt thereof.
5. Use according to claim 4, wherein the acidic polymer is an acrylic polymer.
6. Use according to claim 5, wherein the acrylic polymer is a carbopol®.
7. Use according to claim 5, wherein the acrylic polymer is at least partially neutralized with a base to form a salt thereof.
8. Use according to claim 7, wherein the base is a nitrogen containing base.
9. Use according to claim 8, wherein the base is selected from the group consisting of ammonium hydroxide, dialkanolamines and trialkanolamines.

10. Use according to claim 9, wherein the composition comprises ethanol in a concentration of 15-50% w/w, polyacrylate in a concentration of 0.05%-5% and ammonium hydroxide in a concentration of 0.1-10%.

11. Use according to claim 10, wherein the composition comprises ethanol in a concentration of 20-50% w/w, polyacrylate in a concentration of 0.05%-5% and triethanolamine in a concentration of 0.1-6%.

12. Use according to any one of claims 1 to 11, wherein the composition further comprises urea.

13. Use according to any one of claims 1 to 12, wherein said composition further comprises plants-derived material.

14. Use according to claim 13, wherein the plant derived material is in the form of plant extracts, tinctures, oils and/or macerates.

15. Use according to claim 14, wherein the plant is selected from the group consisting of arnica, plantago, equisetum, lavender, joubarbe, hamamelis, urtica, calendula, daucus, symphytum, sanguisorba, symphytum, aloe vera, roman chamomile, tea tree, witch hazel, Emu, Celosia Argentea and mameluca.

16. Use according to claim 1, wherein the composition is provided in the form of a gel, cream, emulsion, lotion, suspension, liposomes, ethosomes, microcapsules or microspheres.

17. Use according to claim 1, wherein the composition further comprises one or more ingredients selected from the group consisting of a local anesthetic, antibiotic, plant extract, vitamin, growth factor, protein, histamine, carnosine, insulin, anti-inflammatory agent, antiseptic agent, antifungal agent, anticytokine, an interleukin, growth hormone and re-epithelization factors.

18. Use according to claim 1, wherein the topically acceptable carrier comprises one or more of the following polymers: chitin, guar, chitosan, polyvinylpyrrolidone, polyvinylalcohol, gum, silastic, eudragit, pectin, hyaluronic acid, hyaluronate, gelatin, gelatin derivative, agar, polymer adhesives, polaxomers, a cellulose derivative, including methylcellulose, ethylcellulose, hydroxypropylcellulose and hydroxyethylcellulose, or a mixture of said excipients.